

**BAY AREA OZONE STRATEGY
CONTROL MEASURES SS-2
BAAQMD REGULATION 8, RULE 20:
GRAPHIC ARTS
PRINTING & COATING OPERATIONS:
SOCIOECONOMIC ANALYSIS**

SEPTEMBER 19, 2008

Prepared for
Bay Area Air Quality Management District

Prepared by
Applied Development Economics
100 Pringle Avenue, Suite 560 ♦ Walnut Creek, California 94596 ♦ (925) 934-8712
2151 River Plaza Drive, Suite 150 ♦ Sacramento, CA 95833 ♦ (916) 923-1562
www.adeusa.com

CONTENTS

1. Description of the Proposed Rule	1
2. Impact of Proposed Rule Amendments.....	2
Methodology	3
Regional Demographic Trends.....	3
Regional Economic Trends.....	4
Description of Affected Industries	6
3. Socioeconomic Impact Analysis	10
Annual Compliance Cost.....	13

1. DESCRIPTION OF THE PROPOSED RULE

The Bay Area Air Quality Management District (“District”) seeks to amend Regulation 8, Rule 20 (Graphic Art Operations) to 1) lower VOC cleaning solvents, which will shift these products from solvent based to water based; 2) lower VOC standard for flexographic ink used on porous substrates; and 3) lower applicability limit, such that more small emitting facilities will be subject to the rule. As part of the rule-amending process, the District will require smaller facilities to register with the District (including some that now require permits). According to the District, this requirement will save the smallest facilities some money, even though the rule will impact smaller facilities than are currently impacted.

Currently, the District permits printing facilities that emit more than 150 lbs VOC per year. Under the proposed amendments to Regulation 8, Rule 20, printing facilities that emit 75 lbs or more per month would be subject to the rule and be required to register; a facility that emits 400 lbs per month would be required to have a permit, which is approximately twice the cost of registration.

District staff estimates that proposed amendments to the graphic arts rule will result in total reductions of VOC emissions of approximately 1.6 TPD, based on estimated reductions of 0.6 TPD attributable to controls that would take effect in 2008-2009 and additional reductions of 1.9 TPD attributable to further control that would take effect in 2010.

2. IMPACT OF PROPOSED RULE AMENDMENTS

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area (Bay Area) region. Following an overview of the socioeconomic analysis methodology, the first part of this section compares the Bay Area against California and provides a context for understanding demographic and economic changes that have occurred within the Bay Area between 1997 and 2007. After an overview of Bay Area industries, we focus on industries impacted by the proposed amendments to Regulation 8, Rule 20.

For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

METHODOLOGY

The socioeconomic analysis of the proposed amendments to Regulation 8, Rule 20 involves the use of information provided directly by BAAQMD, as well as secondary data used to describe the industries affected by the proposed rule amendments.

Based on information provided by BAAQMD staff, ADE determined that the impacts would affect businesses in a narrow set of related industries, namely printing. With this information we profiled impacted businesses and industries, analyzing data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for Bay Area businesses.

With data from the US Economic Census and other sources such as US IRS, California Employment Development Department, and County Business Patterns, ADE was able to estimate revenues and profit ratios for industries impacted by the proposed rule amendments. In calculating aggregate revenues generated by Bay Area businesses in affected industries, ADE first estimated annual revenue based upon available data, particularly the US Economic Census. ADE calculated ratios of profit per dollar of sales for the businesses and industries on which the analysis focused. ADE also used a regional IMPLAN input-output model to calculate certain inputs such as printing ink and cleaning solvents used by industries subject to the proposed amendments to Regulation 8, Rule 20.

The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected businesses and industries are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. Where applicable, ADE also examines whether affected industries can pass costs to consumers. To the extent that such job losses appear likely and significant, the indirect multiplier effects of the job losses area estimated using a regional IMPLAN input-output model.

REGIONAL DEMOGRAPHIC TRENDS

The Bay Area experienced moderate population growth from 1997 to 2007. In the five-year period between 1997 and 2002, the nine-county region increased by 1.1 percent annually, from 6.6 million in 1997 to almost 6.9 million in 2002. From 1997 to 2007, the population increase was from 6.6 million to 7.2 million for an increase of slightly less than one percent annually. In other words, the Bay Area grew at a slower pace between 2002 and 2007 relative to 1997 and 2002. Over the ten-year period stretching from 1997 to 2007, California grew at a faster rate of 1.4 percent per year.

Within the Bay Area, the greatest percentage increase occurred in Contra Costa County. From 1997 to 2007 Contra Costa increased its population by 1.6 percent annually. All other Bay Area counties had population increases slower than Contra Costa County and the State. The smallest percentage increase occurred in San Mateo County where population grew

annually by 0.4 percent from 1997 to 2007.

TABLE 1
POPULATION TRENDS: SAN FRANCISCO BAY AREA

	Population			Annual Percent Change		
	1997	2002	2007	97-02	02-07	97-07
California	32,670,019	35,088,671	37,662,518	1.4%	1.4%	1.4%
Bay Area	6,566,939	6,943,440	7,217,424	1.1%	0.8%	0.9%
Alameda County	1,381,705	1,483,623	1,526,148	1.4%	0.6%	1.0%
Contra Costa County	887,065	983,360	1,042,341	2.1%	1.2%	1.6%
Marin County	241,412	250,090	255,982	0.7%	0.5%	0.6%
Napa County	120,095	128,282	135,969	1.3%	1.2%	1.2%
San Francisco County	772,834	788,971	808,844	0.4%	0.5%	0.5%
San Mateo County	704,834	715,072	733,496	0.3%	0.5%	0.4%
Santa Clara County	1,654,833	1,716,105	1,808,056	0.7%	1.0%	0.9%
Solano County	375,512	408,923	424,823	1.7%	0.8%	1.2%
Sonoma County	428,649	469,014	481,765	1.8%	0.5%	1.2%

Source: ADE, Inc., based California Department of Finance

REGIONAL ECONOMIC TRENDS

The Bay Area is one of the world's greatest regional economies. It benefits from pre-eminent knowledge-based industries, with competitive strength flowing from an unmatched culture of entrepreneurship, world-leading research institutions, and some of the nation's best educated and most highly skilled workforce. However, in the five year period between 2002 and 2007, the Bay Area economy had not grown significantly with respect to employment, which contrasts with the relatively robust employment growth in the Bay Area between 1997 and 2002.

As Table 2 shows, as of 2007, the professional and business services sector was the largest employer in the region, at 581,742 jobs or 17.5 percent of all private and public sector jobs. In 1997, professional and business services also accounted for 17.5 percent of all Bay Area employment. While professional and business service decreased annually by a slight rate of 0.34 percent between 1997 and 2002, between 2002 and 2007 employment increased in this sector by an annual clip of 1.13 percent. In terms of share of total employment, healthcare\private education and manufacturing sectors are the next largest sector, boasting 11.1 percent and 10.4 percent of total jobs in the Bay Area. In the state as a whole, healthcare\private education and manufacturing comprise 10.4 percent and 9.3 percent of all jobs, meaning the Bay Area has a slightly greater advantage in these sectors that provide a wider breadth of career mobility opportunities relative to many other sectors and industries.

At 10.2 percent, retail is the fourth largest employing sector, followed by leisure and hospitality, all three of which tend to pay less than manufacturing and healthcare. While retail slightly declined by 0.2 percent per year between 2002 and 2007, leisure increased by a robust clip of almost two percent per year in the Bay Area.

Another large industry in the Bay Area is public service, or government, with 446,000 jobs, or 13.2 percent of the total. Within the public sector, employment had risen fastest since

2002 in state government, whereas local government employment actually declined by 0.3 percent annual pace between 2002 and 2007. Employment in federal agencies declined annually by a greater amount, at 1.68 percent annual clip over the five year period between 2002 and 2007.

Overall, since 2002, total public and private employment in the Bay Area changed slightly at 0.12 percent per year between 2002 and 2007, going from 3,312,548 workers in 2002 to 3,332,658 workers in 2007. In comparison, in the five-year period between 1997 and 2002, employment grew in aggregate from 3,182,044 to 3,312,548, for a yearly growth of 0.81 percent.

TABLE 2
EMPLOYMENT PROFILE OF THE SAN FRANCISCO BAY AREA, 1997-2007

Industry	1997	2002	2007	% of Total Private and Public Employment in 2007: Bay Area	% of Total Private and Public Employment in 2007: California	Annual Percent Chg, 97-02	Annual Percent Chg, 02-07
Total, all private industries	2,765,671	2,860,813	2,886,583			0.68%	0.18%
Goods-Producing	637,975	612,864	559,837			-0.80%	-1.79%
Natural Resources and Mining	27,991	27,570	22,510	0.7%	2.6%	-0.30%	-3.97%
Construction	142,100	182,399	192,229	5.8%	5.7%	5.12%	1.06%
Manufacturing	467,884	402,895	345,098	10.4%	9.3%	-2.95%	-3.05%
Service-Providing	2,127,696	2,247,949	2,326,746			1.11%	0.69%
Trade, Transportation, and Utilities	580,609	580,925	576,997			0.01%	-0.14%
Retail	326,010	340,881	340,519	10.2%	10.8%	0.90%	-0.02%
Wholesale	131,533	129,192	124,943	3.7%	4.6%	-0.36%	-0.67%
Transportation\Warehouse\Utilities	123,066	110,852	111,535	3.3%	3.1%	-2.07%	0.12%
Information	103,464	124,190	113,082	3.4%	3.0%	3.72%	-1.86%
Financial Activities	188,631	209,626	206,370	6.2%	5.8%	2.13%	-0.31%
Professional and Business Services	559,140	549,827	581,742	17.5%	14.4%	-0.34%	1.13%
Education and Health Services	297,240	348,361	370,398	11.1%	10.4%	3.22%	1.23%
Leisure and Hospitality	278,231	300,502	330,689	9.9%	9.9%	1.55%	1.93%
Other Services	120,381	134,518	147,468	4.4%	4.9%	2.25%	1.86%
Federal Government	57,233	56,887	52,279	1.6%	1.6%	-0.12%	-1.68%
State Government	80,249	84,600	87,550	2.6%	2.9%	1.06%	0.69%
Local Government	278,891	310,248	306,246	9.2%	11.0%	2.15%	-0.26%
Total, all public and private industries	3,182,044	3,312,548	3,332,658	100.00%	100.00%	0.81%	0.12%

Source: ADE, Inc., from data supplied by the Labor Market Information Division of the California Employment Development Department

DESCRIPTION OF AFFECTED INDUSTRIES

Proposed amendments to Regulation 8, Rule 20 potentially affects a narrow set of industries, namely those industries within printing (NAICS Code 32311). Table 3 below identifies economic trends for the printing industry and its sub-industries over the five-year period from 2002 to 2007. The table shows that this industry has contracted since 2002 in terms of number of businesses and employment, going from 1,083 establishments to 760 establishments. Data come from the California Employment Development Department (EDD), and are for businesses whose primary economic activity is any one of the ten printing sub-industries identified below in Table 3. The table also shows that, in inflation-adjusted terms, workers' respective average pay also went down for the most part. One area of growth was in digital printing (NAICS 323115), which increased in terms of employment by almost six percent a year. To be sure, the proposed amendments to Regulation 8, Rule 20 for the most part affects establishments in the other printing sub-industries, although District staff notes that a few are also subject to existing and new provisions.

TABLE 3
SAN FRANCISCO BAY AREA: PRINTING INDUSTRY TRENDS, 2002-2007

		----- 2002 -----			----- 2007 -----			Annual Percent Change 02-07		
		Establishments	Employment	Average Pay	Establishments	Employment	Average Pay	Estab	Emp	Avg Pay
32311	Printing	1,083	13,601	\$52,181	760	8,624	\$49,572	-6.8%	-8.7%	-1.0%
323110	Commercial Lithographic Printing	421	6,694	\$57,476	248	3,507	\$56,466	-10.0%	-12.1%	-0.4%
323111	Commercial Gravure Printing	10	113	\$51,669	5	80	\$56,466	-12.6%	-6.7%	1.8%
323112	Commercial Flexographic Printing	41	765	\$48,476	31	375	\$50,281	-5.6%	-13.3%	0.7%
323113	Commercial Screen Printing	104	1,615	\$40,999	85	1,363	\$40,757	-3.9%	-3.3%	-0.1%
323114	Quick Printing	350	2,069	\$40,619	231	1,288	\$39,118	-8.0%	-9.0%	-0.8%
323115	Digital Printing	45	653	\$64,555	65	864	\$50,894	7.9%	5.8%	-4.6%
323116	Manifold Business Forms Printing	17	351	\$48,936	11	138	\$50,894	-8.6%	-17.0%	0.8%
323117	Books Printing	22	390	\$52,298	18	260	\$46,222	-4.3%	-7.8%	-2.4%
323118	Blankbook, Binders, etc.	4	30	\$66,121	1	8	\$46,222	-23.0%	-23.2%	-6.9%
323119	Other Commercial Printing	70	922	\$54,319	65	741	\$49,655	-1.3%	-4.3%	-1.8%

Source: ADE, Inc., based on California Employment Development Department

Similar to Table 3 above, Table 4 below further discusses the economic context within which District officials are contemplating amendments to the Graphic Arts Operations regulation. Table 4 includes estimates on revenues generated by existing printing businesses. Estimates are based on data from the 2002 Economic Census, particularly for the San Francisco Bay Area, which were then adjusted for inflation. That same source included data on cost of materials. The consultant utilized the IMPLAN input-output model for the Bay Area region to determine what share of materials are printing ink and cleaning materials. The table also includes estimates on impacted establishments' respective net profits, the rate of which comes from the US Internal Revenue Service for the five-period between 2000 and 2005.

As Table 4 shows, the printing industry in the Bay Area is a \$1.5 billion industry, with commercial lithographic printing (NAICS 323110) as the largest segment at \$687 million. Table 5 provides a breakdown on printing establishments that are right now subject to the rule, subject to the rule but exempt, and those that are not subject to Regulation 8, Rule 20. According to the District, there are 261 establishments that are permitted per Regulation 8, Rule 20, and, of these 85 are permitted but exempt from the existing rule. If the proposed amendments are adopted, of the 85, 48 will lose their exemption while 37 will remain permitted but exempt. An estimated 499 establishments whose primary economic activity is printing are not in the District's databases and, of these, District staff believes approximately 25 will be subject to the new requirements of Regulation 8, Rule 20. Thus, if the proposed amendments are adopted, approximately 63 establishments in the Bay Area will be covered by the rule and its new provisions. In addition, of the 261 establishments permitted per Regulation 8, 176 are already subject to the provisions of the regulation and will be impacted by the rule in terms of increases in cleaning costs that will also affect the 73 establishments discussed above (48 and 25). It is important to note that, of the 176 establishments, 56 will save money as they will be eligible for registration in lieu of permits, with the former considerably cheaper than the latter.

TABLE 4
SAN FRANCISCO BAY AREA: PRINTING INDUSTRY ECONOMIC PROFILE, 2007

		----- Materials -----								
		Total Establishments	Employment	Average Pay	Estimated Revenues	Cost of Materials	Ink Materials (8%)	Cleaning Materials (1%)	Other Materials	After tax Net Profits
32311	Printing	760	8,624	\$49,572	\$1,510,360,462	\$550,191,991	\$44,015,359	\$5,501,920	\$500,674,712	\$64,945,500
323110	Commercial Lithographic Printing	248	3,507	\$56,466	\$687,822,134	\$278,883,706	\$22,310,696	\$2,788,837	\$253,784,172	\$29,576,352
323111	Commercial Gravure Printing	5	80	\$56,466	\$14,104,903	\$4,469,288	\$357,543	\$44,693	\$4,067,052	\$606,511
323112	Commercial Flexographic Printing	31	375	\$50,281	\$72,202,554	\$27,110,587	\$2,168,847	\$271,106	\$24,670,634	\$3,104,710
323113	Commercial Screen Printing	85	1,363	\$40,757	\$167,851,795	\$69,169,958	\$5,533,597	\$691,700	\$62,944,662	\$7,217,627
323114	Quick Printing	231	1,288	\$39,118	\$256,127,679	\$71,875,770	\$5,750,062	\$718,758	\$65,406,951	\$11,013,490
323115	Digital Printing	65	864	\$50,894	\$116,426,848	\$28,982,495	\$2,318,600	\$289,825	\$26,374,071	\$5,006,354
323116	Manifold Business Forms Printing	11	138	\$50,894	\$37,147,462	\$15,871,477	\$1,269,718	\$158,715	\$14,443,044	\$1,597,341
323117	Books Printing	18	260	\$46,222	\$45,543,104	\$14,041,611	\$1,123,329	\$140,416	\$12,777,866	\$1,958,353
323118	Blankbook, Looseleaf Binders, etc.	1	8	\$46,222	\$1,074,311	\$596,920	\$47,754	\$5,969	\$543,197	\$46,195
323119	Other Commercial Printing	65	741	\$49,655	\$112,059,672	\$39,190,178	\$3,135,214	\$391,902	\$35,663,062	\$4,818,566

Source: ADE, Inc., based on California EDD, US Economic Census 2002, US Bureau of Labor Statistics, IMPLAN Input-Output Model IMPRO 2.0, and US Internal Revenue Service

TABLE 5
SAN FRANCISCO BAY AREA PRINTING INDUSTRY BY PERMIT STATUS

		----- Not Permittees -----		----- Existing Permittees -----			
	Total Establishments	Not Subject To Rule	Will Be Subject To Rule	Currently Exempt: Will Not Lose Exemption	Currently Exempt: Will Lose Exemption	Not Exempt	
32311	Printing	760	474	25	37	48	176
323110	Commercial Lithographic Printing	248	128	14	12	17	77
323111	Commercial Gravure Printing	5	3	0	0	0	2
323112	Commercial Flexographic Printing	31	15	2	2	2	10
323113	Commercial Screen Printing	85	40	4	5	5	31
323114	Quick Printing	231	179	0	12	16	24
323115	Digital Printing	65	49	0	4	4	8
323116	Manifold Business Forms Printing	11	7	0	0	0	4
323117	Books Printing	18	8	0	0	0	10
323118	Blankbook, Looseleaf Binders, etc.	1	1	0	0	0	0
323119	Other Commercial Printing	65	44	5	3	4	9

Source: ADE, Inc., based on California EDD, US Census County Business Patterns and Bay Area Air Quality Management District

3. SOCIOECONOMIC IMPACT ANALYSIS

This section of the report examines the socioeconomic impact analysis of proposed amendments to Regulation 8, Rule 20 on a discrete number of printing establishments in the San Francisco Bay Area. As indicated above District staff indicates that approximately 63 establishments will fall within the purview of the rule as amended. As printing businesses that are not right now subject to Regulation 8, Rule 20 evolve and grow, over time, even more businesses may be included.

Table 6 below identifies aggregate revenues based on the distribution of establishments per Table 5. In estimating aggregate revenues by specific printing sub-industries, the consultant used data from the Economic Census for the nine-county Bay Area. In addition to generating sub-industry specific revenue per worker ratios for purposes of estimating aggregate revenues, the consultant adjusted these ratios for small-sized businesses using a combination of the US Census' County Business Patterns and Non-Employer Statistics. The 63 businesses that will be subject to Regulation 8, Rule 20 generate an estimated \$82.8 million in aggregate, or \$1.3 million in average gross revenues. Overall, printing establishments generate \$1.9 million a year on average. Following Table 6, Tables 7 and 8 present estimates on how much the potentially impacted establishments incur in terms of materials cost, particularly printing ink and cleaning solvents. In addition, the table includes estimates on net profits generated by the affected sources.

TABLE 6
SAN FRANCISCO BAY AREA PRINTING INDUSTRY BY PERMIT STATUS AND ESTIMATED REVENUES

			----- Not Permittees -----		----- Existing Permittees -----		
			Est. Revenues:	Est. Revenues:	Est. Revenues:	Est. Revenues:	
Total Revenues (All Estabs.)			Not Subject To Rule	Will Be Subject To Rule	Currently Exempt: Will Not Lose Exemption	Currently Exempt: Will Lose Exemption	Est. Revenues: Not Exempt
32311	Printing	\$1,510,360,467	\$207,921,306	\$11,170,252	\$54,014,609	\$71,679,525	\$1,165,574,776
323110	Commercial Lithographic Printing	\$687,822,134	\$57,723,639	\$6,313,523	\$19,889,676	\$28,573,901	\$575,321,394
323111	Commercial Gravure Printing	\$14,104,904	\$2,006,685	\$0	\$310,932	\$0	\$11,787,288
323112	Commercial Flexographic Printing	\$72,202,555	\$3,590,532	\$478,738	\$929,385	\$1,173,961	\$66,029,940
323113	Commercial Screen Printing	\$167,851,795	\$11,786,319	\$1,178,632	\$4,910,475	\$5,308,622	\$144,667,748
323114	Quick Printing	\$256,127,680	\$77,517,583	\$0	\$18,324,246	\$24,305,735	\$135,980,116
323115	Digital Printing	\$116,426,849	\$24,059,807	\$0	\$4,215,477	\$4,705,649	\$83,445,917
323116	Manifold Business Forms Printing	\$37,147,462	\$1,016,330	\$0	\$0	\$0	\$36,131,132
323117	Books Printing	\$45,543,105	\$991,738	\$0	\$241,047	\$0	\$44,310,320
323118	Blankbook, Looseleaf Binders, etc.	\$1,074,311	\$1,074,311	\$0	\$0	\$0	\$0
323119	Other Commercial Printing	\$112,059,672	\$28,154,363	\$3,199,359	\$5,193,370	\$7,611,657	\$67,900,922

Source: ADE, Inc., based on California EDD, US Census County Business Patterns and Bay Area Air Quality Management District

TABLE 7
PROFILE OF SAN FRANCISCO BAY AREA PRINTING INDUSTRY NOT CURRENTLY SUBJECT TO REGULATION 8, RULE 20: IMPACTS ON ESTABLISHMENTS NEWLY SUBJECT TO RULE

		----- Materials -----							
		Estab. That Will Be Subject To Reg 8, Rule 20 After Rule Change Adoption	Employment	Revenues	Cost of Materials	Ink Materials (8%)	Cleaning Materials (1%)	Other Materials	After tax Net Profits
32311	Printing	73	356	\$82,849,777	\$41,066,525	\$3,285,322	\$410,665	\$37,370,537	\$3,562,540
323110	Commercial Lithographic Printing	31	146	\$34,887,424	\$19,885,517	\$1,590,841	\$198,855	\$18,095,821	\$1,500,159
323111	Commercial Gravure Printing	0	0	\$0	\$0	\$0	\$0	\$0	\$0
323112	Commercial Flexographic Printing	4	9	\$1,652,698	\$872,370	\$69,790	\$8,724	\$793,857	\$71,066
323113	Commercial Screen Printing	9	44	\$6,487,253	\$3,758,144	\$300,651	\$37,581	\$3,419,911	\$278,952
323114	Quick Printing	16	66	\$24,305,735	\$9,588,612	\$767,089	\$95,886	\$8,725,637	\$1,045,147
323115	Digital Printing	4	24	\$4,705,649	\$1,646,733	\$131,739	\$16,467	\$1,498,527	\$202,343
323116	Manifold Business Forms Printing	0	0	\$0	\$0	\$0	\$0	\$0	\$0
323117	Books Printing	0	0	\$0	\$0	\$0	\$0	\$0	\$0
323118	Blankbook, Looseleaf Binders, etc.	0	0	\$0	\$0	\$0	\$0	\$0	\$0
323119	Other Commercial Printing	9	66	\$10,811,017	\$5,315,149	\$425,212	\$53,151	\$4,836,785	\$464,874

Source: ADE, Inc., based on California EDD and US Economic Census

TABLE 8
PROFILE OF SAN FRANCISCO BAY AREA PRINTING INDUSTRY NOT CURRENTLY SUBJECT TO REGULATION 8, RULE 20: IMPACTS ON ESTABLISHMENTS
ALREADY SUBJECT TO RULE

		----- Materials -----							
		Existing Estab. Already Subject To Reg 8, Rule 20 After Rule Change Adoption	Employment	Revenues	Cost of Materials	Ink Materials (8%)	Cleaning Materials (1%)	Other Materials	After tax Net Profits
32311	Printing	176	5,867	\$1,165,574,776	\$433,190,467	\$34,655,237	\$4,331,905	\$394,203,325	\$50,119,715
323110	Commercial Lithographic Printing	77	2,701	\$575,321,394	\$233,269,263	\$18,661,541	\$2,332,693	\$212,275,029	\$24,738,820
323111	Commercial Gravure Printing	2	62	\$11,787,288	\$3,734,927	\$298,794	\$37,349	\$3,398,784	\$506,853
323112	Commercial Flexographic Printing	10	336	\$66,029,940	\$24,792,896	\$1,983,432	\$247,929	\$22,561,536	\$2,839,287
323113	Commercial Screen Printing	31	1,098	\$144,667,748	\$59,616,056	\$4,769,285	\$596,161	\$54,250,611	\$6,220,713
323114	Quick Printing	24	439	\$135,980,116	\$38,159,388	\$3,052,751	\$381,594	\$34,725,043	\$5,847,145
323115	Digital Printing	8	520	\$83,445,917	\$20,772,450	\$1,661,796	\$207,725	\$18,902,930	\$3,588,174
323116	Manifold Business Forms Printing	4	133	\$36,131,132	\$15,437,244	\$1,234,980	\$154,372	\$14,047,892	\$1,553,639
323117	Books Printing	10	249	\$44,310,320	\$13,661,526	\$1,092,922	\$136,615	\$12,431,988	\$1,905,344
323118	Blankbook, Looseleaf Binders, etc.	0	0	\$0					
323119	Other Commercial Printing	9	331	\$67,900,922	\$23,746,716	\$1,899,737	\$237,467	\$21,609,512	\$2,919,740

Source: ADE, Inc.

Annual Compliance Cost

According to the District, VOC reductions will be achieved by lowering the low-VOC emissions exemption limit, by lowering current and adopting new VOC limits for graphics arts cleaning products, and by lowering the VOC limit for flexographic printing inks on porous substrates. District staff compared the cost of petroleum-based graphic arts cleaning products to lower VOC-containing cleaning products. Based on statements from distributors, staff estimates that the current costs of petroleum-based graphic arts cleaning products are the same as or in some cases higher than the costs for lower VOC-cleaning products. This is because many lower VOC-containing cleaning products are formulated with water or other materials that are less expensive than petroleum-based products. However, for the purposes of the socioeconomic analysis, the consultant analyzed impacts associated with a 3.5 percent increase in costs starting in 2009 as identified in Table 5 of the District's June 2008 Workshop Report and, on top of this, another 3.5 percent increase that is expected to occur in 2010. In addition to the across-the-board one-time and annual registration and cleaning expenses, flexographic printers will experience an estimated 3.5 percent increase in the cost of flexographic ink.

TABLE 9
ONE-TIME AND ANNUAL COSTS ASSOCIATED WITH REGULATION 8, RULE 20 AS AMENDED

Regulation 8, Rule 20 Costs	
One-Time Registration Fee	\$215
Annual Renewal Fee	\$115
Cleaning Costs	3.5% increase across the board
Ink Costs	3.5% increase borne only by flexographic printers

Source: Bay Area Air Quality Management District

The 63 establishments that will be impacted by amendments to Regulation 8, Rule 20 will incur in aggregate \$35,186 in new costs (see Table 10). When compared against aggregate net profits of \$3.6 million, cost-to-net profits are significantly below the ten-percent threshold of significance, and this goes across the board for almost all printing sub-industries. With respect to flexographic printers, whose ink costs should rise by 3.5 percent, the cost-to-net profit ratio for this industry is also below the threshold of significance, at 4.5 percent.

Table 11 tracks impacts on 176 establishments that are already subject to Regulation 8, Rule 20. The proposed amendments will also affect these establishments by increasing their respective cleaning costs. Flexographic printers will experience increases in cleaning costs and cost of ink. The table also includes negative numbers for 56 of the 176 establishments that will experience savings as a result of paying the registration fee in lieu of permits. Similar to Table 10, Table 11 shows across the board impacts are less than significant.

TABLE 10
SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSED AMENDMENTS TO REGULATION 8, RULE 20: GRAPHIC ARTS OPERATIONS: IMPACTS ON ESTABLISHMENTS
NEWLY SUBJECT TO RULE

----- Costs -----												
		Estab. That Will Be Subject To Reg 8, Rule 20 After Rule Change Adoption	Aggregate One-Time Registration Costs	Aggregate Annual Renewal	3.5% Increase in Cleaning Costs (2009 & 2010): Aggregate Incremental Cost	Compliant Flexographic Ink: Aggregate Incremental Cost	Total First Year Aggregate Costs: Reg 8, Rule 20	After-Tax Net Profits	Costs As Percent of Net Profits	Costs As Percent of Net Profits (excluding one-time)	Direct Employ ment Impacts	Signific ance
32311	Printing	73	\$15,695	\$8,395	\$13,814	\$2,443	\$35,186	\$3,562,540	1.0%	0.7%	-----	no
323110	Commercial Lithographic	31	\$6,665	\$3,565	\$6,689		\$16,919	\$1,500,159	1.1%	0.7%	-----	no
323111	Commercial Gravure	0	\$0	\$0	\$0		\$0	\$0			-----	no
323112	Commercial Flexographic	4	\$860	\$460	\$293	\$2,443	\$3,841	\$71,066	5.4%	4.5%	-----	no
323113	Commercial Screen	9	\$1,935	\$1,035	\$1,264		\$4,234	\$278,952	1.5%	0.8%	-----	no
323114	Quick Printing	16	\$3,440	\$1,840	\$3,225		\$8,505	\$1,045,147	0.8%	0.5%	-----	no
323115	Digital Printing	4	\$860	\$460	\$554		\$1,874	\$202,343	0.9%	0.5%	-----	no
323116	Manifold Business Forms	0	\$0	\$0	\$0		\$0	\$0			-----	no
323117	Books Printing	0	\$0	\$0	\$0		\$0	\$0			-----	no
323118	Blankbook, Looseleaf Binders	0	\$0	\$0	\$0		\$0	\$0			-----	no
323119	Other Commercial Printing	9	\$1,935	\$1,035	\$1,788		\$4,758	\$464,874	1.0%	0.6%	-----	no

Source: ADE, Inc.

TABLE 11
SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSED AMENDMENTS TO REGULATION 8, RULE 20: GRAPHIC ARTS OPERATIONS: IMPACTS ON
ESTABLISHMENTS ALREADY SUBJECT TO RULE

----- Costs -----											
	Existing Estab. Already Subject To Reg 8, Rule 20 After Rule Change Adoption	Aggregate One-Time Registration Costs (savings for 56 of 176)	Aggregate Annual Renewal	3.5% Increase in Cleaning Costs (2009 and 2010): Aggregate Incremental Cost	Compliant Flexographic Ink: Aggregate Incremental Cost	Total First Year Aggregate Costs: Reg 8, Rule 20	After-Tax Net Profits	Costs As Percent of Net Profits	Costs As Percent of Net Profits (excluding one-time)	Direct Employment Impacts	Significance
32311 Printing	176	-\$6,020	\$0	\$286,149	\$64,462	\$344,591	\$50,119,715	0.7%	0.7%		no
323110 Commercial Lithographic Printing	77	-\$2,580		\$154,089		\$151,509	\$24,738,820	0.6%	0.6%	-----	no
323111 Commercial Gravure Printing	2	-\$108		\$2,467		\$2,360	\$506,853	0.5%	0.5%	-----	no
323112 Commercial Flexographic Printing	10	-\$323		\$16,377	\$64,462	\$511,913	\$2,839,287	2.8%	2.9%	-----	no
323113 Commercial Screen Printing	31	-\$1,075		\$39,380		\$38,305	\$6,220,713	0.6%	0.6%	-----	no
323114 Quick Printing	24	-\$860		\$25,207		\$24,347	\$5,847,145	0.4%	0.4%	-----	no
323115 Digital Printing	8	-\$323		\$13,722		\$13,399	\$3,588,174	0.4%	0.4%	-----	no
323116 Manifold Business Forms Printing	4	-\$108		\$10,197		\$10,090	\$1,553,639	0.6%	0.6%	-----	no
323117 Books Printing	10	-\$323		\$9,024		\$8,702	\$1,905,344	0.5%	0.5%	-----	no
323118 Blankbook, Looseleaf Binders, etc.	0	\$0		\$0		\$0	\$0			-----	no
323119 Other Commercial Printing	9	-\$323		\$15,686		\$15,364	\$2,919,740	0.5%	0.5%	-----	No

Source: ADE, Inc.